REMARKS

This responds to the Final Office Action mailed on March 23, 2009.

Claims 1, 4, 10, 12, 22, 24, and 26 are amended, claims 5 and 11 are cancelled, and no claims are added; as a result, claims 1-4, 6-10, and 12-26 are now pending in this application.

§ *103 Rejection of the Claims*

Claims 1-5 and 19-20 were rejected under 35 U.S.C. § 103(a) as being obvious over Coutts (U.S. 6,311,165) and Deshpande (U.S. Publication No. 2003/0093568).

Claims 16-17 were rejected under 35 U.S.C. § 103(a) as being obvious over Coutts and Deshpande as applied to claim 10, and further in view of Vasilik (U.S. 5,515,081).

Claim 18 was rejected under 35 U.S.C. § 103(a) as being obvious over Coutts, Deshpande and Vasilik as applied to claims 10 and 16, and further in view of Suman et al. (U.S. 5,717,387; hereinafter "Suman").

Claim 21 was rejected under 35 U.S.C. § 103(a) as being obvious over Coutts and Deshpande as applied to claim 1, and further in view of Buswell et al. (U.S. 5,918,039; hereinafter "Buswell").

Claims 22-24 and 26 were rejected under 35 U.S.C. § 103(a) as being obvious over Coutts, Deshpande and Buswell.

Claim 25 was rejected under 35 U.S.C. § 103(a) as being obvious over Coutts, Deshpande and Buswell as applied to claim 24, and further in view of Vasilik.

Before directly addressing the inventive differences between the Applicant's claimed invention and the cited references it is insightful to clearly understand the technology described in Coutts and Deshpande. The cited references describe CPU-based devices that are in stark contrast to the controller claimed in the independent claims of the present application.

Coutts

From the written description and the drawings it is clearly evident **Coutts that describes a processor-based system**. For example, using a passages cited in the Office Action, in Figure 1 "[p]rocessor 6 applies the loaded driver software to hardware control electronics 8 to control

module hardware 9. Dependent upon the application loaded from server 3 to device 1, it is possible for the software to access legacy host 4 over LAN 2, server 3 and WAN 5 as required (col. 8, lines 49 – 53). In fact Coutts describes use of more than one processor. For example, even the Ethernet adaptor 366 in Coutts has a processor:

> The Ethernet adapter 366 implements the TCP/IP protocol, and is in electronic communication with an embedded processor 374. Processor 374 executes JAVA® code, and communicates with peripheral specific control electronics 376 which controls the hardware 378 in the peripheral 364. For a card reader peripheral *364a,* the hardware 378 includes the card transport mechanism and the magnetic stripe reader. The processor 374 also has associated volatile memory 380 in the form of DRAM and nonvolatile memory 382 in the form of FLASH EPROM.
> (Coutts Col. 21, lines 54 – 63).

The relatively substantial processing power that the hardware in Coutts provides is clearly evident from the detailed description and the drawings. This is not surprising since the teachings of Coutts relate to a banking terminal or ATM requiring secure communications. Accordingly, the Coutts disclosure describes a user interface to allow banking transaction functionality, functionality to read bank cards, functionality to dispense cash, and printer functionality, to name but a few. The ATM of Coutts, in fact, includes sufficient hardware to run Java™ and includes a graphics controller (e.g., see Fig 25). The extent of the functionality provided in Coutts is in stark contract to the simple controller-based architecture of the invention claimed in the present application where user manipulations are communicated to a hoist computer.

Deshpande

Deshpande describes a **remote desktop protocol system** (see title). Clearly from the disclosure Deshpande teaches a processor-based system. This is also clearly evident from drawings (e.g., see Figure 1) and the detailed description. The "thin client terminal 10 includes a **microprocessor** 12, memory 14 and perhaps a local storage device 16" (see paragraph 33). The microprocessor-based hardware in Deshpande processes the bitmap as described in paragraph 57.

As articulated above, both Coutts and Deshpande are processor-based systems.

In stark contrast to Coutts and Deshpande, the claimed invention operates with a

controller instead of a microprocessor providing, inter alia, significant cost advantages. Unlike a processor-based thin client, the claimed invention has a **controller instead of a processor to control the overall operation of the network terminal**. The controller acts as a conduit to transmit all manipulations of the terminal user to a host computer so that all manipulations are fully executed by the host computer (see paragraphs 001 and 023). Unlike Coutts and Deshpande, claim 1 requires that both the **BIOS and the OS operates on the controller**. Accordingly, "the network terminal can be constructed with a System on a Chip (SoC: a programmable logic chip) instead of a current common microprocessor or central processing unit (CPU) and high-capacity memories, thereby attaining a multi- access system at low cost." The network terminal 330 uses a blank state [i.e., stateless], programmable, System on a Chip (SoC) instead of the CPU and its controller" (see paragraph 43).

As shown in Figure 6 of the present application, (1) the controller is **initialized** with the automatically executed BIOS and then (2) the controller is **re-initialized** with the terminal OS. Claim 1 has been amended to clearly indicate that the controller (with the aforementioned functionality) controls the overall operation of the network terminal. "The re-initializing of the controller 510 allows the network terminal 500 to have an OS for its operation (the terminal OS 450) and the **controller 510 that is used to control the overall operation of the network terminal 500 by the terminal OS 450**, such that the user can do a work using the network terminal 500" (see paragraph 84). This is in stark contrast to Coutts and Deshpande where a microprocessor controls the overall operation of the system and does not describe initializing and re-initializing of the claimed controller.

The Office Action alleges that the limitation of claim 4 (now included in amended claim 1) of the controller not being a CPU is shown by Coutts at col. 21, lines 54 – 59. Applicant respectfully disagrees. The controller as claimed in the context of claim 1 is not similar in any way to an Ethernet adaptor. In order to further clarify this, claim 1 has been amended to emphasize that the controller, using the terminal OS, controls the overall operation of the network terminal, the controller being a programmable logic chip instead of a microprocessor or CPU (central processing unit).

Coutts in fact teaches away from this functionality in the paragraph cited in the Office

Action since it relates to a peripheral device that includes a processor.

> FIG. 16 shows a block diagram of **one of the peripherals** 364 of FIG. 3. **The peripheral 364 has an Ethernet adapter 366 (which is the peripheral communication hardware)** having a unique MAC address. The Ethernet adapter 366 implements the TCP/IP protocol, and is in **electronic communication with an embedded processor 374**. Processor 374 executes JAVA.RTM. code, and communicates with peripheral-specific control electronics 376 which controls the hardware 378 in the peripheral 364. For a card reader peripheral 364a, the hardware 378 includes the card transport mechanism and the magnetic stripe reader. The processor 374 also has associated volatile memory 380 in the form of DRAM and nonvolatile memory 382 in the form of FLASH EPROM. (Col. 21, lines 50 – 63)

It is thus submitted that Coutts does not teach the limitation of a network device using a controller instead of a CPU as claimed in the context of claim 1.

Further, the Office Action alleges that the limitation of claim 5 (now included in amended claim 1) of the controller being re-initialized by the terminal OS is shown by Coutts at col. 16, lines 55 – 57 and col. lines 35,36). Applicant respectfully disagrees.

The above referenced passages refer to a peripheral device and not the network terminal itself in Coutts. The cited passages from Coutts are included in the extracts from Coutts set out below:

> An application module that is closing down can send a "GOODBYE" message to indicate that it is no longer available. Peripheral modules can become non-functional. This can happen as a result of hardware failure (for example if a card is jammed in card reader 13) and an application module that has gone fatal may send a "GOODBYE" as it withdraws from the team. Alternatively if a peripheral module is physically removed, or is otherwise unable to signal with a "GOODBYE" message, then the first application module that attempts to send a message to the now missing application module may detect that it is missing and send a "GOODBYE" message on its behalf. When the peripheral module is reconnected, or becomes operational, its application module may broadcast a "HELLO" message to allow the other application modules to adapt accordingly. (Col. 12, lines 43 – 57)

It is submitted that the teaching that an "application module may broadcast a "HELLO" message to allow the other application modules to adapt accordingly" in no way whatsoever

teaches the following limitations of claim 1:

> a **controller to be initialized by operation of the BIOS** to enable a connection between the network terminal and a host computer and downloading a terminal operating system (OS) from the host computer to the network terminal; [and]
>
> ... the **controller being re-initialized by the terminal OS to control the overall operation of the network terminal** and being a programmable logic chip instead of a microprocessor or CPU (central processing unit).

As discussed in KSR International Co. v. Teleflex Inc. et al. (U.S. 2007), the determination of obviousness under 35 U.S.C. § 103 is a legal conclusion based on factual evidence. *See* Princeton Biochemicals, Inc. v. Beckman Coulter, Inc., 7, 1336-37 (Fed. Cir. 2005). The legal conclusion, that a claim is obvious within § 103(a), depends on at least four underlying factual issues set forth in Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17 (1966): (1) the scope and content of the prior art; (2) differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) evaluation of any relevant secondary considerations. **Therefore, the test for obviousness under §103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention**. *See* Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir.1985). The **Examiner must, as one of the inquiries pertinent to any obviousness inquiry under 35 U.S.C. §103, recognize and consider not only the similarities but also the critical differences between the claimed invention and the prior art.** *See* In re Bond, 910 F.2d 831, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990), reh'g denied, 1990 U.S. App. LEXIS 19971 (Fed. Cir.1990). Additionally, critical differences in the prior art must be recognized (when attempting to combine references). In re Bond, 910 F.2d 831, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990), reh'g denied, 1990 U.S. App. LEXIS 19971 (Fed. Cir.1990).

The Office Action submits that re-initialization of the controller of claim 1 is taught by Coutts at col. 12, lines 35,36: "Initial "HELLO" messages may be used to introduce each member of the current team configuration." It is also submitted that this passage, that relates to an application module utilizing a processor (e.g., see Figure 4a), is in stark contrast to the network terminal of claim 1 that uses a controller instead of a processor or CPU. Nowhere in Coutts nor Deshpande

is a network terminal described or even suggested that includes a controller instead of a processor or CPU that is initialized by an OS to obtain a BIOS and the same controller is then re-initialized by the BIOS.

In view of the remarks above it is submitted that claim 1 is allowable. As claims 2-4, 6-9, and 19-21 depend from claim 1 they are also allowable.

Independent claims 10, 22, and 24 also include the limitations of a controller that is not a processor or CPU to control operation of the overall operation of a network terminal, the controller being initialized by a BIOS and then re-initialized by an OS. In view of the remarks above it is submitted that independent claims 10, 22, and 24 are allowable. Dependent claims 12-18, 23, and 25-26 are thus also allowable.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative at (408) 278-4041 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

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